Nuclear division in Ascomycetes.—GUILLIERMOND[17] has continued his studies on nuclear division in the Ascomycetes, which support in all essentials the conclusions of HARPER and contravene those of MAIRE (except as to Galactinia), though they are perhaps not irreconcilable with them. However, his descriptions are not so detailed as those of HARPER in his last paper on Phyllactinia, especially as it relates to the centers of spindle formation. In this paper GUILLIERMOND discusses chiefly the mother-cells of the asci and secretion. The species studied comprise *Pustularia vesiculosa*, *Aleuria cerea*, *Peziza rutilans*, *P. Catinus*, and *Galactinia succosa*. —B. M. DAVIS.

Soil waters.—CAMERON and BELL show[18] that as a rule the various mineral constituents of the soil solutions exist in sufficient concentration for the growth of crops, and that the magnitude of the concentrations is *practically the same for all soils*, because, generally speaking, soils contain all the common rock forming minerals, some of each species presenting its surfaces to the solvent action of the soil water; and on account of hydrolysis of the solutes this solvent action is continuous. The paper strongly supports the previous work of the Bureau of Soils which has been so much criticised, often on *a priori* grounds.—C. R. B.

Non-infection by rusts.—*Erysiphe graminis* has a number of biologic forms which are confined to special hosts. Thus conidia from the form on wheat will not infect barley and that on oats will not infect wheat. SALMON[19] has recently shown that the reason of the non-infection is not due to inability on the part of the conidia to germinate, but because the haustoria cannot establish relations with the cells of the host plant.—B. M. DAVIS.

Endoparasitic adaptation.—SALMON[20] shows that *Erysiphe graminis* adapts itself readily to an endophytic life. When spores are sown on a wound in oats or barley the mycelium ramifies in the intercellular spaces and haustoria are abundantly produced. Conidiophores develop profusely and perfect conidia where they arise on a free surface; and they even break through a weak barrier when they develop in intercellular spaces.—C. R. B.

Greening of seeds.—ERNST[21] finds that during the ripening of the fruit of *Eriobotrya japonica* the seeds become green, quite independent of light, by reason of the greening of the amyloplasts. The process begins at the plumule of the

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17 GUILLIERMOND, A., Remarques sur la karyokinèse des Ascomycètes. Ann. Mycol. **3**:343–361. *pls. 10–12.* 1905.

18 CAMERON, F. K., and BELL, J. M., The mineral constituents of soils. U. S. Dept. Agric., Bur. Soils Bull. 30. pp. 70.

19 SALMON, E. S., On the stages of development reached by certain biologic forms of Erysiphe in cases of non-infection. New Phytol. **4**:217. 1905. *pl. 5.*

20 SALMON, E. S., On endophytic adaptation shown by *Erysiphe graminis* DC. under cultural conditions. Phil. Trans. Roy. Soc. London B. **198**:87–97. *pl. 6.* 1905.

21 ERNST, A., Das Ergrünen der Samen von *Eriobotrya japonica.* Beihefte Bot. Centralbl. **19**[1]: 118–130. *pl. 2.* 1905.